UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

REPORT ON CONTROL OF MOUNTAIN PINE BEETLE

KOOTENAI NATIONAL FOREST

SPRING AND FALL

1933

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Insect Control
Kootenai

REPORT ON CONTROL OF MOUNTAIN PINE BEETLE
KOOTENAI NATIONAL FOREST
SPRING OF 1933

Personnel and Organization:

The Kootenai 1933 Spring Insect Control comprised three projects, two being in the nature of a follow up of previous work; one being in a drainage that had seen no control work before.

Organization was similar in every respect to the 1932 project, the report on which should be read as a comparison to this. The same personnel and procedure were used, with the exception that weather conditions permitted the use of fire for destroying the insects. All treating was done by burning, whereas last year only about 60% was burned.

Cost Report:

A statement of the accomplishments and costs of the combined projects follows:

Period of work, May 10 to June 30.

Acres spotted, 3986.
Acres treated, 3986.

Number trees spotted, 945.
Number trees treated, 908.

1. Total Expenditure by Appropriations:

a. Insect Control appropriation ----------	$ 4177.43
b. Less 15% deduction ----------	605.70
c. Total, actually spent ----------	3571.73

2. Classified Expenditures:

a. Wages, temporary labor ----------	2629.26
b. Travel and transportation ----------	80.99
c. Subsistence supplies ----------	786.48
d. Other supplies and equipment ----------	75.00
e. Total ----------	3571.73

3. Activity Costs:

		Total		Per Tree
a.	Supervision	$ 490.21		.539
b.	Travel	179.42		.198
c.	Transportation	80.99		.089
d.	Equipment	80.03		.088
e.	Camps	255.84		.282
f.	Spotting	857.69		.945
g.	Treating	1406.20		1.549
h.	Combination spotting and treating (costs not segregated)	221.35		.243
i.	Total	3571.73		3.933
j.	Subsistence (Prorated to above)	1114.26	Per manday	1.108

Instructions for Activity Costs:

Subsistence is not given as a separate activity cost, but mess costs, including food supplies and cookhouse labor, but not transportation, are prorated against labor and salaries on the basis of number of days on each activity. Non-effective time of men paid by the month, such as Sundays, Saturday half-holidays, rainy days, etc., are not carried as a separate item, but the total monthly rate of the employee is charged against the activities in which he is engaged.

a. Supervision. Include general overhead, warehouseman, camp manager not actually engaged in treating or spotting.

b. Travel. Travel expenses paid to and from the job and from camp to camp.

c. Transportation. All expense of pack strings, including forage, shoeing, wages of packer, horse hire. All truck and wagon hire, including drivers. Freight and express.

d. This item includes only replacement equipment purchased locally. Most of the equipment used was old stock held in the local warehouse and which had been depreciated out of previous allotments.

e. Camps. Labor cost of setting up and breaking camps, bull cook and wood cost. No transportation included.

f. Spotting. Labor cost of spotting, including chief spotter.

g. Treating. Labor cost of treating, including crew foreman. Cost of mop up and checking of fires.

4. Output:

Spotting. Number of trees per effective manday 4.181
Number of acres per effective manday 17.637

Treating. Number of trees per effective manday 2.386

Combination (Spotting) (Treating) - Number of trees per effective manday 1.116

Total mandays on job, effective and noneffective 1005

5. Meal Cost: (Subsistence only)

Subsistence supplies ---------- $ 786.48

Total number of meals ---------- 3070

Cost per meal ---------- .256

Net labor schedules were practically the same as the year before. The increase in cost per tree is due to fewer trees per acre and to the fact that one camp was removed five miles from a road, necessitating the services of a pack string and the expenditure of considerable added labor for camp construction and maintenance.

Comparative Figures on Individual Projects:

PROJECT	EST.NO.TO TREAT: 1932 SURVEY	1933 ACTUAL SPOTTED	1933 ACTUAL TREATED	PERCENT: L.P. & E.S.	PERCENT: WHITE PINE	ACRES TREATED	TOTAL DIRECT: COST PER TREE	TOTAL GROSS: CHARGE PER TREE
Keeler Cr:	1000	403	403	-	100	1392	2.18	3.04
Stanley " :	456	283	283	3	97	1862	3.11	4.24
Spread " :	450	259	222	38	62	732	3.93	5.16
	1906	945	908	10	90	3986	2.90	3.93

Lower Keeler Creek Unit. T.30N., R.34W.

Two hundred eighty-two trees treated Fall of 1930 and Spring of 1931, plus a large number of cull logs and down timber resulting from a logging operation. Five hundred forty-five treated Spring of 1932.

The 1933 job was managed by Fred Waylett. Low cost due to accessible camp location, small timber and concentrated area. The treating was somewhat compliecated by the presence of a species of Pissodes in association with the Dendroctonus. Although no trees were treated especially for Pissodes the Dendroctonus infested trees were burned in a manner to destroy as much as practicable of the stump and the ground litter about the stump; thus killing many Pissodes. It is believed a very careful job was done.

Period of treatment, May 10 to June 1.

An intensive examination of the area made in November 1933 gave an estimate of only 122 trees newly attacked.

Stanley Creek Project. T.29N., R.34W.

Four hundred fifty-five trees treated Spring of 1931. Four hundred ninety-five trees treated Spring of 1932.

The 1933 treatment was managed by George Hjort. The trees were mostly only lightly hit and were small specimens. No unusual difficulties were encountered. All treatment was by the burning method. Work period, May 18 to June 10. It is felt that no more treating will be necessary. The November examination found only two new attacks on fifty-seven acres which would give an estimate of sixty-nine new attacks on the 1985 acres treated last spring.

Spread Creek Project. T.36N., R.33W.

This is in a block of some nine million feet of white pine situated from four to five miles from the Yaak highway. The trees are large and tall; 65% of the white pine treated were over 18 inches in diameter, several of them were over 50 inches. As this block had never been treated before, added expense was incurred for establishment of a three mile control base and the strip lines set at eight chain intervals from it. This was charged to "spotting". The expense of establishing and supplying camp was heavy as this camp was thirty-eight miles from the supply base.

The unit borders a large area burned over in 1931, on which there were scattered decadent white pine. Those trees that had not been killed outright by the fire had either been killed by beetles in 1932 or were infested in 1933. To prevent a migration of these insects from the burn to the green timber during the next flight period we treated as many of these "bug trees" as we could handle, in some instances going back as much as three miles into the burn for heavily infested groups. This phase of the work was done by a combination spotting and treating crew.

Although all treating was done by the burning method we did not get all the beetles as the season was too far advanced and some of the insects were in flight before we got to them. Also, we left thirty-seven spotted lodgepole pine because of lack of funds. Period of work June 1 to June 26.

Fred Waylett was camp manager. Results are considered satisfactory in view of the unusual conditions. The November examination gave an estimate of one hundred thirty-seven new attacks.

Respectfully submitted,

R. W. Williams

Assistant Forester

January 31, 1934

Approved:

C. A. Webb.

Forest Supervisor

Feb 6, 1934.

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Insect Control
Kootenai

REPORT ON CONTROL OF MOUNTAIN PINE BEETLE
KOOTENAI NATIONAL FOREST
FALL OF 1933

Introductory:

All of the Kootenai fall beetle control work was done in the drainage of Pete Creek, T. 36 N., R. 32 W., in a block of about twenty-two million feet of white pine bordered on the east and south by lodgepole pine, on the west by subalpine types and spruce, and on the north by the 1931 burn. This unit had been treated for three successive years (1926-1928), there being about six hundred trees treated each year. The failure to effect a decrease was believed at the time to be due to reinfestation from the vast areas of lodgepole to the north which were heavily infested and as it was not economically feasible to treat the lodgepole the whole project was abandoned. However, subsequent observation and experience has led to the belief that the interchange of mountain pine beetles from lodgepole to white pine and vice versa are not as frequent and inevitable as once thought. Moreover, in the light of further experience in control we realized that the 1926 to 1928 work was not of a high degree of efficiency. And as the 1931 burn removed thousands of acres of surrounding lodgepole together with the bugs infesting them, approval was obtained for another attempt at preservation of the white pine stand.

The bulk of the white pine infestation was centered on an area of about 400 acres where the previous treating had been done and was extremely heavy. Clumps of 50 to 100 infested trees were frequent. These trees averaged about 18" D.B.H. and were fine, tall specimens.

Organization:

The white pine block lies on the west slope of Pete Creek, begins about three miles from the confluence with the Yaak River and extends north four miles and west from the creek from one to two miles. The heaviest concentration of insects was at the north end. The object of the 1933 season's work was to effect a hundred percent treatment of the concentrated area, to pick up the more prominent and accessible clumps of infestation in the remaining white pine area and to push the clean up into the surrounding lodgepole stands on a zone approximately a half mile wide. This was done. The plans call for a final follow up job in the Fall of 1934 which should be as near one hundred percent as possible.

The project from beginning to end was attended by many difficulties and unusual situations. Allotments of funds came from three different sources:-(1) the regular I.C. appropriation, (2) the E.C.F., (3) the Impnira; each carrying widely divergent schedules of wages, hours of employment and regulations as to whom could be employed. There were about one hundred men on the project, classified roughly as follows: 25 experienced "bug men" paid from I.C. allotments, receiving $3.00 a day less 80 cents board deduction, working 8 hours a day, 6 days a week; 25 C.C.C. boys, inexperienced, receiving $30.00 a month and found, working 6½ hours (on the job) daily, 5 days a week; 50 Impnira men, mostly inexperienced as to beetles but good woodsmen, receiving $4.80 a day less $1.00 board deduction, working 8 hours a day, 5 days a week with a maximum of 130 hours a month. There were three camps on the project with the intention of having an I.C. camp, a C.C.C. camp and a Nira camp, but distinct delineations on a project of this sort are not feasible.

The first camp (I.C.) was on the south end of the white pine block and at the end of the Pete Creek road. This camp treated about 450 trees and in addition served as packers' headquarters and base of operations for the entire project. Fred Waylett acted as camp manager and also as "walking boss" for the whole operation.

Camp #2 (C.C.C.) was situated at Olsen Meadows, 4½ miles up the trail from Camp #1. This location was adjacent to the heaviest concentration of beetles. The C.C.C. boys were ordered out by the Army before the work was completed and were replaced by N.R.A. employees. Frank Thomas was in charge.

Camp #3 (NIRA) located on Beetle Creek, 2 miles by trail beyond Camp #2. Their work largely dovetailed with that of #2. C. N. Davidson, promoted from chief spotter, managed this outfit.

In order to keep a current expenditure record and gather material for an intelligent analyses of activity costs, J. W. Farris was hired in the capacity of auditor and field clerk. In addition he kept all property records, made frequent trips to the camps to audit the camp managers' production figures, timebooks and commissary accounts, and arranged for prompt delivery of supplies and transportation. This reporting officer had direct supervision of the project, hired all the men, lined up the organization and checked the technical phases of the work.

Procedure:

The usual system of spotting was used throughout; three man crews working between strip lines spaced eight chains apart. The infestation was so heavy in places that a fourth man had to be added in order to keep proper contact. As many as 300 trees were tagged in a day by one crew.

The treating in Camp #1 was all by the hand logging and burning method, the treating crews consisting of three men and a strawboss.

In camps 2 and 3 most of the treating operation was handled as would be a logging job. Saw crews followed up the strip lines, falling the infested timber and bucking it into lengths suitable for skidding with horses. A saw boss kept these saw crews lined up, saw to it that no spotted trees were overlooked and guided the skidding crews to their work in a progressive manner. These skidding crews were comprised of six to eight men and one team of horses. The logs were swamped out then skidded into large decks for burning, the slash and small tops piled and burned and the stumps peeled. Other reliable individuals then followed, burning the decks, chucking in older fires and making a final cleanup. In this manner it is believed that every down piece and chunk of pine with green bark on it was destroyed, thus not only killing the insects at hand but removing favorable host material for insects in flight next spring. Each skidding crew was in charge of a strawboss experienced in beetle control. Four teams of horses were employed on the project.

Isolated individual trees and groups were picked up by four-man crews in the usual manner.

The organization also included a saw filer, as there were as many as twelve saw gangs working at one time; a blacksmith, who kept the horses properly shod and the logging equipment conditioned; two packers with from nine to twenty head of pack animals; one truck driver, operating on the 35 mile haul from Troy; one medical student acting as first aid man, required and furnished by the C.C.C. contingent.

The feeding of the men was an expensive item. Although provisions were cheap, the labor charge was excessive. Cooks received $1.20 an hour according to the N.R.A. schedule and due to regulations of the N.R.A. and C.C.C. pertaining to hours of employment, twice the number of flunkies had to be hired as would normally be the case. It must be said, however, that the board was as near to perfection in respect to quality, variety and quantity as was ever served in the timber. It had much to do in maintaining the high state of efficiency of the men and in preventing excessive turnover in the face of unusually severe weather and unpleasant working conditions.

An unprecedented amount of rain and snowfall added to the difficulties and increased the costs. Most of the work was carried on in rain or snow. Much labor was involved in piling and repiling the infested timber. so that it would burn. Much time was spent keeping roads and trails in a passable condition and in keeping tentage, bedding, provisions and equipment out of the mud. The C.C.C. boys were not provided with winter clothing or other facilities for combatting rigorous weather; hence unusual work had to be done to make their camp as comfortable as possible under the conditions.

The foregoing is cited as an explanation of those items in the following cost analyses that may appear excessive. In fact, the cost records on this project can hardly be used as a basis for estimates of costs on future projects.

Expected Results:

The accomplishments in respect to insect control cannot be stated until another period of flight is over, but everything that we intended to do on this 1933 program was done. The 63 trees spotted but not treated are all lodgepole pine far removed from the white pine block. A follow up for the entire drainage is recommended for the Fall of 1934. This should give the area adequate protection for many years to come.

Cost Analyses:

Period of work, September 22 to November 20.

Acres spotted, 4363.
Acres treated, 4257.

Number trees spotted, 2633.
Number trees treated, 2570.

1. Total Expenditure by Appropriations:

a.	Insect Control Appropriation -------	$ 2250.00
b.	E. C. F. " -------	574.77
c.	Impnira " -------	7702.73
d.	E.C.W. Cp.#17 contributed -------	749.03
e.	Total	11276.53

2. Classified Expenditures:

a.	Wages, temporary labor ----------	$ 8149.01
b.	Wages, horse hire ----------	359.06
c.	Travel and transportation ----------	185.12
d.	Subsistence supplies ----------	1759.59
e.	Other supplies and equipment -------	74.72
f.	Contributed time (C.C.C.) ----------	749.03
g.	Total	11276.53

3. Activity Costs:

		Total	Per Tree
a.	Supervision	1298.37	.505
b.	Travel	106.48	.041
c.	Transportation	958.22	.373
d.	Equipment	397.90	.155
e.	Camps	749.82	.292
f.	Spotting	1135.94	.442
g.	Treating	6629.80	2.579
h.	Total	11276.53	4.387
i.	Subsistence (Prorated to above)	2858.29	per manday 1.301
j.	Subsistence supplies used	1949.62	
k.	Total number of meals	8617	
l.	Cost per meal for subsistence only	.226	

Explanation of Activity Costs:

Subsistence is not given as a separate activity cost, but mess costs, including food supplies and cookhouse labor, but not transportation, are prorated against labor and salaries on the basis of number of mandays on each activity. Non-effective time, such as Sundays, Saturday half-holidays, rainy days, etc., is not carried as a separate item, but the total rate of monthly employees is charged against the activities in which he is engaged. The activity costs include all contributed time.

a. Supervision. Includes general overhead, warehouseman, camp manager not actually engaged in treating or spotting.
b. Travel. Travel expenses paid to and from the job, and from camp to camp.
c. Transportation. All expense of pack strings, including forage, shoeing, wages,of packer, horse hire. All truck and wagon hire, including drivers. Freight and express.
d. Equipment. This item includes only replacements purchased locally. Most of that used was general Forest Service stock which had been depreciated out of previous allotments.
e. Camps. Labor cost of setting up and breaking camps, bull cook and wood cost. No transportation included.
f. Spotting. Labor cost of spotting, including chief spotters.
g. Treating. Labor cost of treating, including crew foreman. Cost of horses used on skidding. Cost of mop up and chucking in fires.

4. Output:

Spotting. Number of trees per effective manday	10.427
Treating. Number of trees per effective manday	1.971
Number of mandays on project	2,755

Species percentage of treated trees:

White Pine ----------	82%
Lodgepole Pine ------	13%
Spruce ----------	5%

As before stated these costs are not representative; should not be used as a guide for future control work; and as a general policy the simultaneous use of different wage schedules and conditions of employment on the same job is not to be thought of. It results in difficulties and agravations too numerous to mention, which not only increases the cost per tree but decreases efficiency.

Respectfully submitted,
Roger W. Billings
Assistant Forester

January 31, 1934.

Approved:
C. S. Chubb.
Forest Supervisor
Feb 6, 1934.